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SUBMIT IN T. ICATE*
(Other instructions on
reverse side)Form approved.
Budget Bureau No. 42-R1425.UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

b. TYPE OF WELL

OIL
WELL ☐GAS
WELL ☒

OTHER

SINGLE
ZONE ☐MULTIPLE
ZONE ☐

2. NAME OF OPERATOR

Southern Union Exploration Company

3. ADDRESS OF OPERATOR

Suite 1800, First International Building, Dallas, TX 75270

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*

At surface 660' FSL & 1980' FEL

At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN MAY 15 1978

16 miles North of Carlsbad

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any)

660'

D. C. C. 640
ARTESIA, OFFICE18. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED
OR APPLIED FOR, ON THIS LEASE, FT.

Only well

19. PROPOSED DEPTH
10,50017. NO. OF ACRES ASSIGNED
TO THIS WELL

320

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

3490.9 G.L.

22. APPROX. DATE WORK WILL START*

June 1, 1978

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17"	13 3/8"	48	350	400 sacks
11"	8 5/8"	24	2450	930 sacks
7 7/8"	4 1/2"	11.6	10,500	550 sacks

Southern Union Exploration Company plans to drill this well to the Morrow and test. A Blowout preventor stack with blinds and pipe rams and a Hydril will be installed on the 13 3/8" casing and tested to 1000 psi before drilling out. The BOP stack will be tested to 1500 psi before drilling out of the 8 5/8" casing. The BOP stack will be retested and a PVT, Flowline sensor, pump stroke counter, de-gasser, and adjustable choke will be in operation before drilling below 6800'. The acreage is dedicated to the gas company of New Mexico.

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ARTESIA, NEW MEXICO

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

TITLE

Consulting Engineer for
Southern Union Exploration Co. April 3, 1978

DATE

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

MAY 12 1978

APPROVED BY

TITLE

ACTING DISTRICT ENGINEER

DATE

MAY 12 1978

CONDITIONS OF APPROVAL, IF ANY:

THIS APPROVAL IS RESCINDED IF OPERATIONS
ARE NOT COMMENCED WITHIN 3 MONTHS.

EXPIRES AUG 12 1978

*See Instructions On Reverse Side

Instructions

General: This form is designed for submitting proposals to perform certain well operations, as indicated, on all types of lands and leases for appropriate action by either a Federal or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable State or Federal regulations concerning subsequent work proposals or reports on the well.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal or State agency offices.

Items 15 and 18: If well is to be drilled, give distances for subsurface location of hole in any present or objective production zone.

Item 22: Consult applicable Federal or State regulations, or appropriate officials, concerning approval of the proposal before operations are started.

★ U.S. GOVERNMENT PRINTING OFFICE: 1974-781-025/VIII-239

N MEXICO OIL CONSERVATION COMMISS
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-132
 Supersedes C-128
 Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator Southern Union Exploration Co.			Lease Exxon Fed.		Well No. 2
Section 23	Township 20 South	Range 25 East	County Eddy		

Actual Location of Well:

1980	feet from the	East	line and	660	feet from the	South	line
Ground Level Elev 3490.9	Producing Formation monow		Pool Undesignated	Dedicated Acreage: 320		Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

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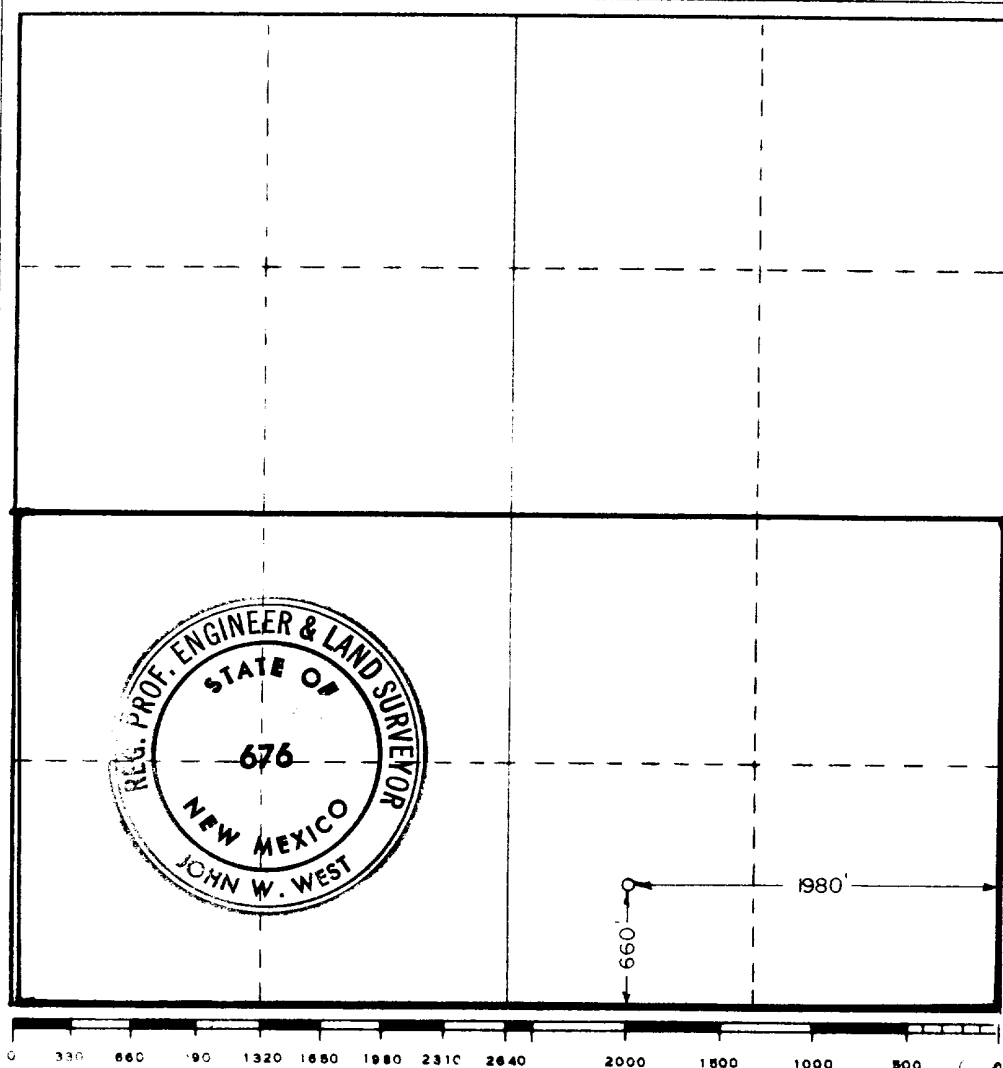
APR 5 1978

**U.S. GEOLOGICAL SURVEY
 ARTESIA, NEW MEXICO**

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name B. B. L. L. L.
 Position CONSULTING ENGINEER FOR
 Company SOUTHERN UNION EXPLORATION
 Date 4-3-78

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed 3/29/78
 Registered Professional Engineer and/or Land Surveyor
John W. West
 Certificate No. John W. West 676
Ronald J. Eidson 3239

RECEIVED

MULTI POINT SURFACE USE AND OPERATIONS PLAN
SOUTHERN UNION EXPLORATION COMPANY
EXXON FEDERAL NO. 2
660' FSL AND 1980' FEL SEC 23 T20S, R25E
EDDY COUNTY, NEW MEXICO

APR 5 1978

U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

This plan is submitted with the Application for permit to drill the above well. This plan describes the location of the proposed well, the proposed construction activities and the necessary surface disturbance involved in drilling this well.

Item 1

The proposed well in relation of existing highways and the village of Seven Rivers is shown on the attached Topo map. The proposed location is shown in red.

Item 2

Attached is a Topo map showing the proposed location, existing roads and trails in the area and the general location of the planned access road. The proposed road will follow an existing road from the American Quasar # 1 Federal well in the SE- $\frac{1}{4}$ of Section 24 in a Southwesterly direction to the Southwest part of the Section. An existing ranch road which runs in an Westerly direction will be repaired and used to the Southeast quarter of Section 23. A new road will be constructed due South approximately 800' to the proposed location. The existing road is shown in blue. The ranch road is shown in green and the new road and location are shown in red.

Item 3

On attached Topo map, existing wells within a one mile radius are shown in blue.

Item 4

If the proposed well is completed for production, a gas production unit and a condensate tank will be erected on the well site. Condensate will be trucked off and sold. It is not know where the gas line would be constructed by the gas purchaser.

Item 5

Water for drilling will be hauled by truck.

Item 6

Caliche for surfacing the road will be obtained from an existing pit near the American Quasar # 1 Federal well in Section 24, T20S, R25E.

Item 7

The location will be cleared after completion of drilling operations. All trash will be buried. The mud pits will be allowed to dry and then covered. All attempts within reason will be made to restore the general area to its former condition.

Item 8

No ancillary facilities are planned.

Item 9

Attached is a rig diagram for the Marcum Rig # 6. The pad size will be 60' to the North of the well, 200' to the South of the well, 150' East of the well, and 160' West of the well. The pit will be plastic lined and the well has been staked and flagged. BOP diagram included.

Item 10

After completion of drilling, the area will be cleaned up and levelled as nearly as possible to its original condition as stated in Item 6.

Item 11

The topography of this area is very rugged with the ground level elevation changing as much as 300' in the area near the well. The land has little commercial use except for grazing. No residences are located within a mile of the proposed location. All land which will be crossed by roads or used for the drilling pad will be government land.

Item 12

The representative responsible for assuring compliance with the approved surface use and operations plan is as follows:

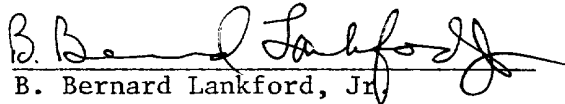
Mr. B. Bernard Lankford, Jr.
300 Building of the Southwest
Midland, Texas 79701

Office Phone: (915) 682-6386
Home Phone: (915) 694-8209

Item 13

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge true and correct; and, that the work associated with the operations proposed herein will be performed by Southern Union Exploration Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

4-4-78
Date


B. Bernard Lankford, Jr.
Consulting Engineer for
Southern Union Exploration Company

APPLICATION FOR DRILLING

SOUTHERN UNION EXPLORATION COMPANY
EXXON FEDERAL NO. 2
660' FSL and 1980' FEL Section 23 T-20S R25E

The following items are submitted in accordance with U.S.G.S. requirements (NTL-6) in support of Form C-101.

1. & 2. Shown on Form C-101.
3. The geologic surface formation is Seven Rivers.
4. A Rotary Drilling Rig will be used.
5. Shown on Form C-101.
6. The estimated tops of geologic markers are as follows:

San Andres	980'
Wolfcamp	7450'
Cisco	8155'
Canyon	8585'
Strawn	8840'
Atoka	9480'
Morrow Lime	9817'
Morrow Classic	9970'
Barnett Shale	10,340'

7. The expected depths at which water, oil or gas formations may be encountered are as follows:

Water	75' - 300'
Oil or Gas: Wolfcamp	7450'
Cisco	8155'
Morrow	9817'

- 8., 9. & 10. Shown on Form C-101.
11. See the attached Mud Program.
12. No coring or testing is anticipated. However, DST's may be run if adequate shows are encountered while drilling.
13. There are not any anticipated abnormal pressures or temperatures.
14. The spud date is approximately June 1, 1978. Drilling operations will take an estimated 45 days.

SOUTHERN UNION EXPLORATION COMPANY
EXXON FEDERAL NO. 2

Mud Program

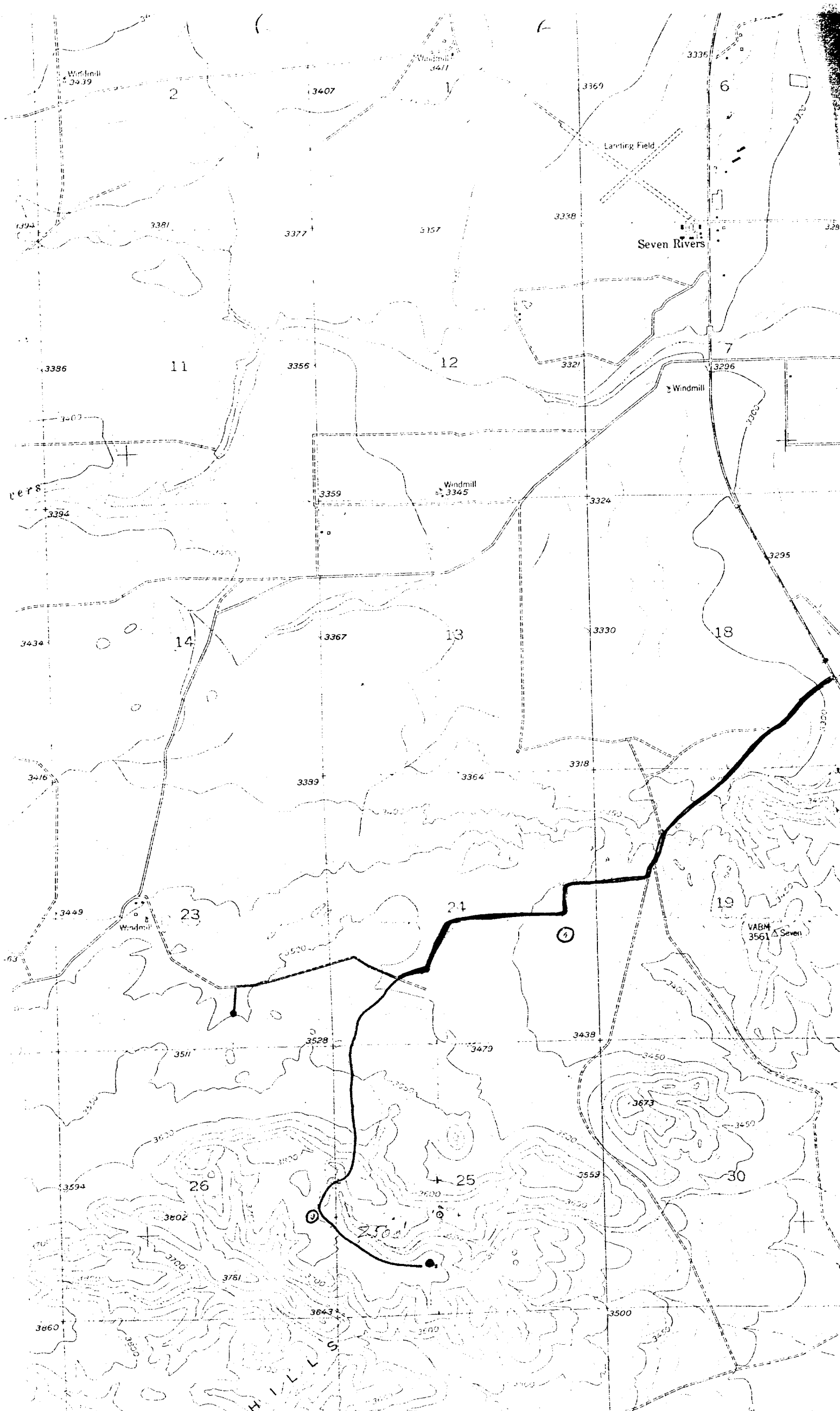
0 - 350' Use Gel-Lime spud mud treated with loss circulation material. Dry drill to casing point if loss of circulation occurs.

350' - 2500' Fresh water Ph 10.5. Dry drill to casing point if loss circulation occurs.

2500' - 6500' Fresh water.

6500' - 9400' Add brine to increase weight to 9.0 - 9.1 ppg. Treat out hardness with soda ash and mud up with Drispac/Dextrid mud. Viscosity 32 - 33 sec and water loss 10 - 15cc.

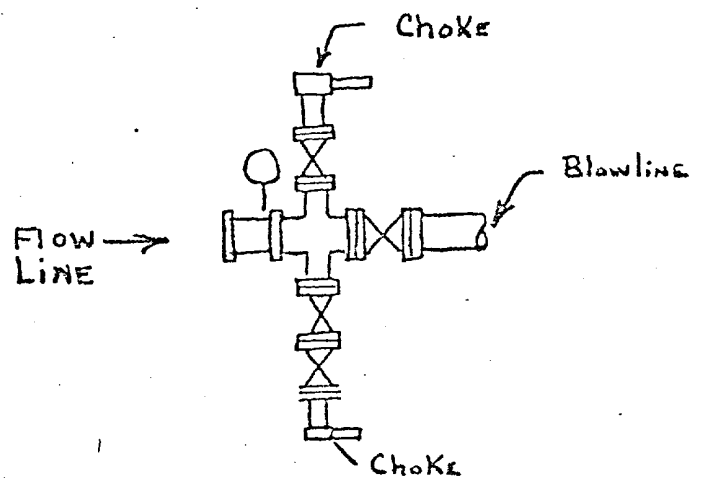
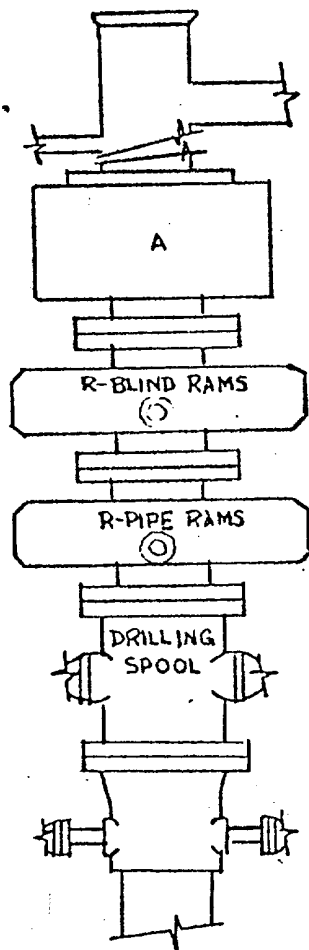
9400' - TD Lower water loss to less than 10cc. Adjust viscosity as needed. Maintain weight at 9.2 - 9.6 ppg. Add 3% KCL prior to drilling Morrow.



Blowout-Preventer Assembly

API Bul. D-13

Marcum Drilling Company
Rig # 6



Arrangement SRRA (Optional w/ operator)
API Class 5M-10" w/ 4" Manifold